

5th ITB International Geothermal Workshop

28 – 29th March 2016, Bandung

Pre-workshop course on

Corporate and government decision making for geothermal energy plants

Project Decision Making, Risk Analysis and Environmental Assessment

Teachers: Kees van den Ende, Christian Bos, Ali Ashat, Triarko Nurlambang and Rianne 't Hoen

Geocap

Cooperating companies and universities



INAGA



IF Technology



DNV GL



Institute Teknologi Bandung



Delft University of Technology
Department of Geo-Technology



University of Twente
Faculty of ITC



Universitas Gadjah Mada



Universitas Indonesia



University of Utrecht
Faculty of Geosciences –
Department of Earth Sciences



Netherlands Organisation for
Applied Scientific Research

IND coordinator:

INAGA

NL coordinator:

ITC

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BAPPENAS (chair)

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Funded by



Ministry of Foreign Affairs of the
Netherlands



Objective of GEOCAP:

Workshop Train the Trainers in Utrecht



- Workshop focused on training work packages
- Target group categorization for the training were defined: government, industry, academia and local stakeholder.
- During the lifetime of the project, training materials will only be accessed by training participants or through WP leaders. After the project ends training materials can be publicly accessed with registration.
- Each work package discussed the study guide and training module. Study guidelines are ready at the end of 2015 and early 2016.
- Training activities will begin in 2016

March 26, 2016



ITB International Geothermal Workshop 2015

IIGCE 2015

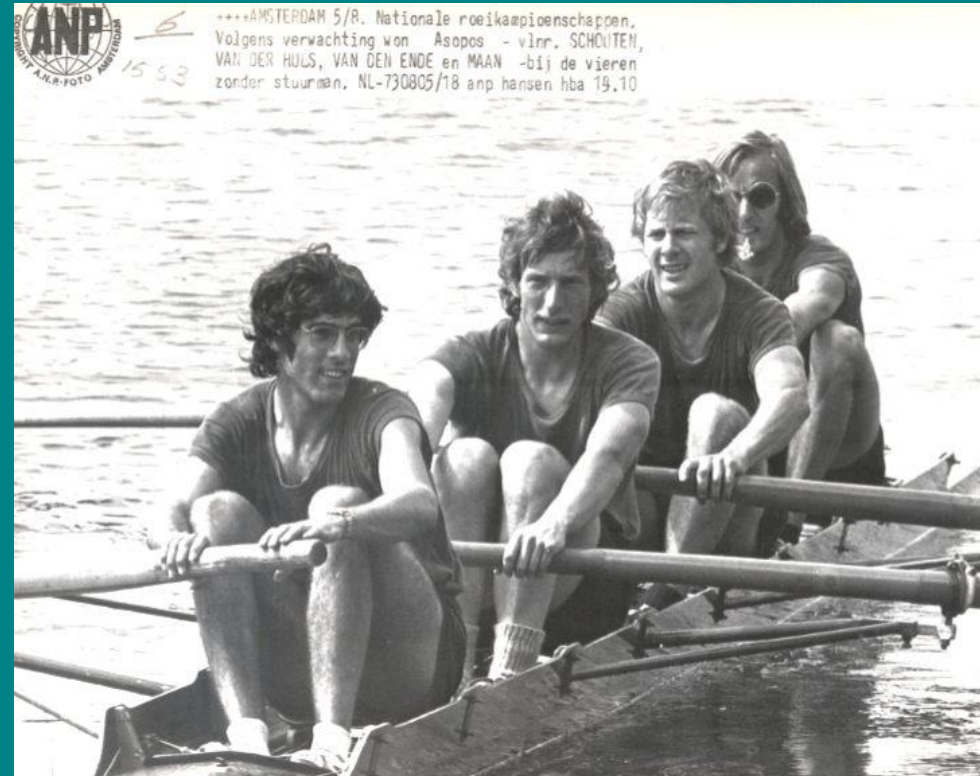


March 26, 2016



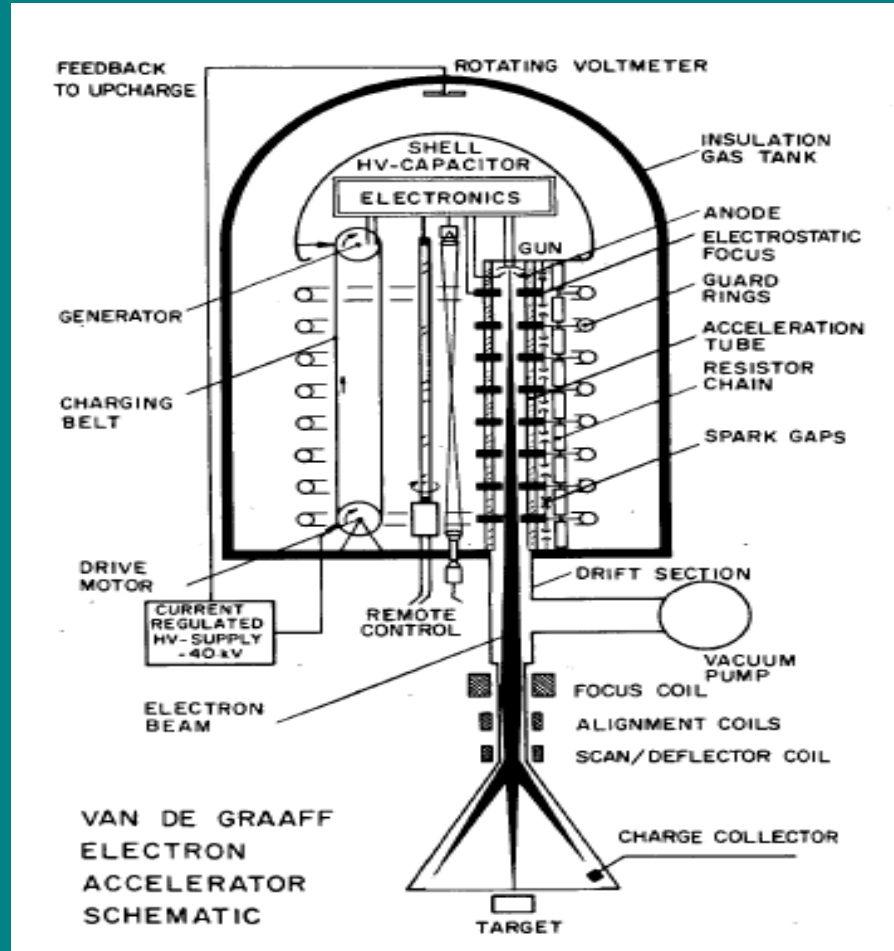
Kees van den Ende

Physical Chemistry RUL: pulse laser spectroscopy &
water activities



From Drs → Dr: 3 MV for Thesis

IRI-Delft



Plus “Polymer materials”

Uni of Twente ('89)

No “Ir” title:

Now only in Bandung!

From Certification Institute to innovative technical service provider to
world leader DNV-GL Energy

Innovation manager of DNV GL
sms 06 15063363



Kees.vandenEnde@dnvgl.com



DNV-GL Energy



Rianne 't Hoen – DNV GL



Rianne 't Hoen

Studied Physics (2003 – 2010)

Utrecht University

PhD Physics on materials for nuclear fusion (2010 – 2014)

University of Amsterdam

Technical professional (2015 – present)

DNV GL Energy

Working on the following topics

- Geothermal energy
- Energy storage
- Battery failure analysis
- Market studies

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Introduce yourself (< 30 sec)

- What is your name?
- What is your background?
 - Study
 - Present position (student/ government/ industry)
 - Relation to geothermal energy
- What do you expect from the course?



Objectives of the course

- Provide an introduction to Governmental policy-making (new geothermal law), Governmental licensing decision-making, and Company decision-making.
- Give an overview of environmental assessment issues and how they impact on Governmental decision-making (licensing).
- Introduce processes and evaluation methods to help mature a geothermal project from first concept to Final Investment Decision/ Commercial Operation Date.

Note, this 2 day course is a pre-cursor for the full courses that will be delivered in August 2016:

- *Governmental policy-making, and governmental licensing decision-making (3 days)*
- *Company decision-making (5 days)*
- *Environmental aspects of geothermal projects (Oct, 8 days)*

Programme pre-workshop course

Day 1 :		
08:30 – 10:00	The energy landscape <ul style="list-style-type: none"> - Paris COP21 - Renewable energy schemes 	
10:00 – 10:15	Break	
10:15 – 11:15	<ul style="list-style-type: none"> - Geothermal energy - Geothermal policy making 	
11:15 – 12:15	Outlook Indonesian energy mix <ul style="list-style-type: none"> - Geothermal policy framework - Government take/ tax regime 	
12:15 – 13:00	LUNCH	
13:00 – 14:00	Strategic environmental assessment <ul style="list-style-type: none"> - Environmental aspects (flora, fauna, landscape, humans, cultural heritage) 	
14:00 – 15:00	SEA criteria <ul style="list-style-type: none"> - Consideration alternatives - Methods of comparison 	
15:00 – 15:30	Break	
15:30 – 17:30	Significant effect and mitigation measures	

Day 2 :		
08:30 – 10:00	Geothermal plant project phases and decision making <ul style="list-style-type: none"> - Project phases and decision gates - Stakeholders - Decision criteria 	
10:00 – 10:30	Break	
10:30 – 12:00	Corporate decision making <ul style="list-style-type: none"> - Decision strategies and evaluation criteria - Methodologies and processes 	
12:00 – 13:00	LUNCH	
13:00 – 14:00	Strategies for decision making <ul style="list-style-type: none"> - Decision tree analysis - Multi-criteria analysis 	
14:00 – 15:00	Risk analysis methods <ul style="list-style-type: none"> - Sensitivity analysis - Multi-criteria analysis 	
15:00 – 15:30	Break	
15:30 – 17:00	Risk mitigation <ul style="list-style-type: none"> - Value of information/ value of flexibility - Portfolio management 	